as all newly-introduced things have, and which practical experience will no doubt assist very largely, if not wholly, in remedying.

We gave our opinion in favour of it on the very first occasion of our seeing it being laid down with the prepared concrete bed or foundation. We remarked at the time, as we maintain still, that the concrete was in truth the road—the essence of it; the wood, a casing or covering—and beautifully adapted to each other we believe they will be found to be, the resilient character of the timber being the best substance that could be interposed between the load and percussion of wheels, and the solid concrete of the foundation.

As regards the requisites in the construction of this wooden upper surface, we have already said that many plans are proposed, some excessively ingenious, but withal somewhat complicated; what is wanted is a simple geometrical construction, perfect as far as possible in that respect, as we would require in the framing of a roof or truss, and not dependent, in any large degree, upon mechanical or extraneous adjuncts, such as pins, wedges, cramps, and the like. Every carpenter will well know what we mean, or, to bring the case still more familiarly home, we will take the example of an arch; all perfect arches are said to be arches of equilibrium, and do not depend upon cement or ties to give them that character—cement, it is true, is added after; but what we mean is that the geometrical construction is first complete, and the cement only added as a make-weight to its general completeness.

It is on account of the necessity of a comprehension of these points that we consider the attention of the engineer, architect, and practical builder to be required first and foremost in such cases, instead of which they appear to be the last who look on, or are called in to the inquisition. If we had to empannel a jury on such a point, who, let us ask, would be chosen? certainly a major part of builders and practical paviors, and the rest, the scientific and the amateurs: our object, therefore, will be to bring the matter in effect before the jury of our class, and to invite their attention to other points which concern them, as we think we shall be able to shew.

Miscellanea.

CHURCHYARDS AND CEMETERIES.—Churchyards and cemeteries are scenes not only calculated to improve the morals and the taste, and by their botanical riches to cultivate the intellect, but they serve as *historical records*. This is the case with the religious temples and burial-grounds in all ages and in all countries. The country churchyard was formerly the country labourer's only library, and to it was limited his knowledge of history, chronology, and biography; every grave was to him a page, and every head-stone or tomb a picture or an engraving. With the progress of education and refinement, this part of the uses of churchyards is not superseded, but only extended and improved. It is still to the poor man a local history and biography, though the means of more extended knowledge are now amply furnished by the diffusion of cheap publications, which will at no distant time, it is to be hoped, be rendered still more effective by the establishment of a system of national education. "A garden cemetery and monumental decoration," our eloquent author observes, "afford the most convincing tokens of a nation's progress in civilization, and in the arts, which are its result. We have seen with what pains the most celebrated nations of which history speaks have adorned their places of sepulture, and it is from their funereal monuments that we gather much, that is known of their civil progress and of their advancement in taste. Is not the story of Egypt written on its pyramids, and is not the chronology of Arabia pictured on its tombs? Is it not on the funeral relics of Greece and Rome that we behold those elegant images of repose and tender sorrow with which they so happily invested the idea of death? Is it not on the urns and sarcophagi of Etruria that the lover of the noble art of sculpture still gazes with delight? And is it not amid the catacombs, the crypts, and the calvaries of Italy, that the sculptor and the painter of the dark ages chiefly present the most splendid specimens of their chisel, and their pencil? In modern days, also, has it not been at the shrine of death that the highest efforts of the Michael Angelos, the Canovas, the Thorwaldsens, and the Chantreys have been elicited and exhibited? The tomb has, in fact, been the great chronicler of taste throughout the world. In the East, from the hoary pyramid to the modern Arab's grave; in Europe, from the rude tomb of the druid to the marble mausoleum of the monarch; in America, from the grove which the Indian chief planted round the sepulchre of his son, to the monument which announces to the lovers of freedom the last resting-place of Washington."—*London's Gardener's Magazine.*

BRICK AND STONE BUILDINGS.—Britain contains all the material necessary for building. Its ancient inhabitants lived in caverns, or formed themselves huts of branches covered with turf. In after ages commerce brought the Phœnicians and other civilized nations, and they learned from those strangers many useful arts. Their habitations, according to Cæsar, were in his time but little improved; their towns were only a confused parcel of huts, generally placed in the middle of woods; the avenues slightly defended with ramparts of earth, or trees felled for the purpose. In such buildings little use was there for stone or brick, yet they could not be unacquainted with the use of stone; for if Stonehenge was a British work, though we are uncertain in what age it was erected, they must have had some skill in masonry at that time. There is now nothing remaining of British architecture except this valuable piece of antiquity, upon which the marks of the chisel appear. The customs and manners of the Britons before Cæsar's invasion are so little known, that nothing certain can be collected relating to them. It will therefore be in vain to inquire into their manner of building, or the materials used previous to the Roman invasion. The Roman examples shew that they were very careful in laying their foundations, digging till they came to solid ground; if they found the ground soft, it was strengthened with piles ranged, and the spaces between filled with charcoal. Their foundations were of such stones as they found nearest the place, bedded in clay or other material easiest had. In this manner they built the station wall at Manchester with paving stones bedded in primitive clay, though the superstructure was laid with lime. The walls at Boroughhill, Leicestershire, the Roman Station at Aldborough in Yorkshire, are also examples of this mode of building. But this mode of laying foundations was not peculiar to the Romans, or any other people since their time, for it has been in use in every age and country. The Saxons and Normans built after this manner, piled or otherwise, as occasion required: London Bridge, 1138, the ancient stone bridge over the river Grant, from which Grantbridge takes its name, are examples. Builders of the fifteenth century laid foundations without mortar, but in a different way, with alternate layers of gravel and lime, core or ashes, well rammed, and sometimes a layer of loam or clay upon that. I am not aware whether this work is much earlier than the fifteenth century, but from the superstructures which I have seen they appeared to be of that age. They are sometimes found without any buildings upon them, and when cut transversely may be known by the strata appearing in stripes of a blue colour. It is as difficult to distinguish the age of a building by the masonry where nothing but plain walls appear, as to distinguish the period when a foundation may have been laid. The several species of masonry introduced by the Romans were used by the Saxons, Normans, and more modern masons, notwithstanding the different styles of architecture which prevailed in different ages, but it is certain that the Britons used stone before their acquaintance with the Roman modes. How they acquired the art of cutting and erecting them in circular and other figures may have been derived from their traffic with other nations, who could also have furnished them with workmen for erecting such a work as Stonehenge. Such temples were common among the Phœnicians, &c., also among the Hebrews before the time of the written law, and until the Tabernacle was erected by Moses. In Stonehenge we find the mason imitated the work of the carpenter by connecting the stones with mortices and tenons, and it is probable that in those parts of the island where timber was scarce and stones plentiful, huts with door-posts and lintels would, in like manner, be framed together. Thus far we may suppose the Britons had advanced before the Romans were settled among them.

CLAREMONT.—We understand that Messrs. Grissell and Peto have received instructions to commence immediately the erection of a new stabling at Claremont for his Majesty the King of the Belgians, for forty horses; the building will be of yellow brick with stone dressings, and red brick groins to angles and window-openings. The old stabling has been pulled down, and the new erection is to be upon the same site. It is expected that Claremont will be used as an occasional nursery for younger members of the Royal family. Mr. Chawner is the architect.

GREAT NORMAN TOWER, BURY ST. EDMUNDS.—A subscription has been commenced, headed by the Marquis of Bristol, hereditary steward of the town of Bury, Sir John Cullum, and others, to restore this noble tower, and a committee has been formed of persons of rank, wealth, and influence in the county of Suffolk, who have employed Mr. Cottingham, his estimate is under 3,000*l.*

THE LAW COURTS IN THE CITY.—From a report made to the Court of Common Council, by the City Lands Committee, it appears that Mr. Pite has been chosen to prepare plans and designs for the City Law Courts. This gentleman and the City Surveyor have presented a report to the Committee, of which the following is the substance:—"In proceeding to study the general arrangements, the Committee is aware that we gave great attention to the question of the possibility of placing any or all of the courts on the ground-floor; and in order to determine this most important question, we laid before the Committee, at their meeting on the 14th of September, a series of plans, in which the attempt was made to place the Courts of Queen's Bench and Common Pleas on the ground-floor, and the Court of Exchequer on the one-pair floor. After due and careful examination, the Committee were unanimously of opinion, that unless all the courts were placed on the one-pair floor, sufficient accommodation would not be obtained for the public, the counsel, the solicitors, and the witnesses. In this opinion we entirely acquiesce. On the ground-floor, we propose that the great entrance in Guildhall-yard shall be mainly, if not entirely, used by the jurors, witnesses, solicitors, and the public; that the entrance for the judges shall be from a doorway towards the east end in Guildhall-buildings, and that the counsel shall enter on the east side. In the public entrance we have thought it right to make the hall, staircase, and vestibule as open, light, and simple as possible. The rooms for witnesses, solicitors, or consultation, are seven in number, according to the plans, and their area in feet superficial is 2,828, exclusive of the halls, staircases, vestibule, and robing-room. We have prepared two elevations, one of the west front in Guildhall-yard, another of that to the south in Guildhall-buildings, together with a perspective view, which shews the general effect of the whole. In the interior of the building we have carried out the style adopted on the outside. The courts would have level ceilings, executed in imitation of the old carved and timbered ceilings of the Tudor period. By a reference to the plans, the Committee will see that this design involves the re-construction of nearly all the present building. The foundations would, of course, be used to a great extent. The internal walls of the courts, and perhaps the back or eastern wall, it would be unnecessary to disturb; but every thing at the back of the courts must be entirely reconstructed, and the two external front walls rebuilt. We have made sufficient general calculations to enable us to advise the Committee that the works could be carried into effect at an expense not exceeding 10,000*l.*"

NATIONAL TASTE IN BUILDINGS.—A military people delight in pavilions; in the Tuileries the lines of tents is terminated with two, distinguished by the name of Pavillons de Flore and Marsan. A maritime people delight in their ships: the English apartments convey the idea of "between decks;" and the larger buildings are often like the man-of-war built laid up in ordinary. In Russia, the palaces have the air of barracks, vast and forlorn; they remind the spectator of the plains of Siberia. In Egypt, the troglodite excavation was revealed in the temple palace; in Greece, the log house in the temple structure; in China, still the tent, in its simplest form.

CATHEDRAL AT COLOGNE.—The committee for completing the cathedral at Cologne have voted 30,000 thalers for the works in the nave, and 10,000 for the north tower. King Louis of Bavaria has promised four painted windows, which are to be ready in 1847. An exhibition of paintings has been opened at Rome, to assist the funds for the same object.

CHURCH BUILDING ACTS.—We are informed on competent authority that a bill has been prepared by Mr. Ker, and will shortly be introduced into the House of Lords by the Bishop of London, for amending and consolidating the Church Building Acts. A more necessary, and if considerately planned, a more useful measure can scarcely be adopted, so far at least as respects populous and increasing districts.—*The English Churchman.*

STOCKTON.—The bridge to substitute the Stockton Suspension Bridge is now in progress; two of the piers are completed—one on each side of the stream; and the gangways and travelling cranes are erected. Mr. Grahamsley, of Newcastle, is the contractor for the masonry, and Mr. Kitchen, of Darlington, the contractor for the iron work. The foundation requires piles fifty feet long, and a ten-horse engine, with a ram of 18 cwt., and three men to drive them. The stone piers are dressed in rock-work, six feet broad at top; the span is eighty-three feet six inches between the piers; the roadway is to be carried by cast-iron bearers about 3½ feet deep. The site is about 100 feet above the suspension bridge, up the stream or to the west of it. It is not certain whether the suspension bridge will be taken down, or used as a turn-out for empty waggons.

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